in keeping the part warm, relaxation of the paralyzed or weak muscles, massage and reëducation of muscles, to which must be added "correction of deformity." Additional covering for a paralyzed limb is essential even in summer months. Splinting is the most important factor of treatment. The splints must be left on day and night and removed only for washing and massage. As soon as recovery has progressed sufficiently, walking should be encouraged, suitable apparatus being employed. Reëducation of muscles means nothing more than exercises carried out with a minute regard for the development of individual muscles. Normal voluntary contraction is to be preferred. There is no doubt that active exercises are the best means of increasing the power of a weak muscle provided that muscle has recovered sufficiently to contract voluntarily. The causes of deformity are gravity and the inability of a weak or paralyzed group of muscles to elongate their opponents after the latter have contracted. Contracture in a muscle is proof of some though perhaps not very obvious recovery of tone in that muscle. The operative procedures are practically limited to tenotomies, fasciotomies, wrenching and tendon lengthenings. The latter is preferable in the bigger tendons. A not uncommon deformity at the knee, due to the pull of the biceps muscle, which has alone recovered or has recovered to a greater extent than the rest of the muscles about the joint, is a triple one—a combination of genu valgum, flexion of the knee and external rotation of the tibia. In all cases correction must be gradual. Osteotomy is not required. Tendon transplantation should never be done until at least two years have elapsed and never while any deformity present has not been fully overcorrected. Transplantation of a muscle which is only just acting is worse than useless. The transplanted tendon should always be attached subperiosteally rather than simply sewn to another tendon. Good results are not usually obtained by trying to make a pure flexor into an extensor. Arthrodesis should never be performed before nine years of age and gives better results if even farther delayed. In the shoulder there are two necessary conditions—fair power in the muscles fixing and moving the scapula, and sufficient recovery in the forearm and hand—to warrant the operation. Arthrodesis of the hip-joint and knee-joint in poliomyelitis seems to the author to be very rarely justifiable. In the ankle arthrodesis gives an excellent result in some cases. The result apparently depends on the stability of the subastragaloid and other joints of the foot.

Carcinoma of Large Bowel.—SHELTON (*Brit. Med. Jour.*, April 16, 1921, p. 555) says that abdominal pain with irregularity of the bowels which is persistent for more than twelve months should be looked upon as sufficient to justify an exploratory operation, for good results can only be obtained when cases come sufficiently early. The author favors radical operations. The excision should be a free one—at least four inches of healthy bowel should be removed on each side of the growth, with the mesentery and lymphatic glands. End-to-end junction is advocated, with preference for simple suture of linen thread to any mechanical devices. Five cases which were operated within the brief space of eighteen days are outlined with good immediate results in 4 cases: 4 of the cases were of the columnar type and only 1 of the

selerosing type; 3 of the growths occurred in the cecum, 1 in hepatic flexure, the other in the pelvic colon. In the author's experience the last-named region is the commonest site; moreover, the growth is usually of the selerosing variety. The operation is a serious one and its mortality rate is high, but the alternative is either death or an artificial anus. The patient, however, in vast majority of instances, will accept the operation which will remove their disease no matter what the risk is.

Fracture of Skull in Children. — MOORHEAD and WHEELER (*Ann. Surg.*, 1921, lxxiii, 72) say that a combination of vault and basal injury can be expected in a very large percentage in which the injury has been severe and when the violence has not been direct and localized in character; in the latter, vault fracture is more usual. The mortality of this series was 26 per cent, in which 5 per cent followed vault fracture, 10 per cent basal, and 11 per cent combined vault and basal injury; stated in another way, involvement of the base gave a mortality of 21 per cent, four times that of the vault. If associated injuries are excluded their mortality is only 17 per cent. Early death (within forty-eight hours) was due to the head injury or associated injury; thereafter, infection in the form of meningitis, often pneumococcic, was the chief factor: 16 of their cases died within twenty-four hours; this means that over three-fourths of the fatalities occurred within the first two days. By comparison with adults, children have 25 per cent better chance for life with an equal grade of skull injury. The number of cases requiring operation is relatively small. In this group 12 per cent were operated upon.

Surgery of Cysts of the Spleen. — FOWLER (*Ann. Surg.*, 1921, lxxxiii, 20) says that there are 2 authentic cases of dermoid cysts recorded. These present studies include 90 cases of non-parasitic cysts of the spleen. Non-parasitic cysts are most common in women during the childbearing period; however, pregnancy and such antecedent diseases of the spleen as malaria and syphilis cannot be evoked for more than minor contributing roles. In the case of pseudocysts, trauma plays the most important role in the simple, large, uniloculnr, so-called hemorrhagic or serous type; the latter usually develops secondarily from the former. The influence of twisted pedicle, embolism and diseases of intrasplenic bloodvessels cannot be denied. In the case of true multiple cysts, inclusions of misplaced cellular nests (endothelium of the peritoneum or cells of origin of lymphatic spaces or vessels) during the developmental period, or as a result in later life of traumatic or spontaneous rupture of the capsule, or of perisplenitis, may result in multiple cysts of the serous or lymphatic variety. True neoformative cysts (lymphangioma, hemangioma) are not common. Sixty cases of non-parasitic cysts have been treated surgically, 11 by puncture, 14 by incision and drainage, 6 by excision or partial splenectomy, 30 by splenectomy. The latter is usually the method of choice. The mortality for splenectomy is 3.5 per cent. Echinococcus disease of the spleen represents the one type of parasitic cysts reported in the literature. This disease is rarely a surgical problem of the spleen alone, for in about four-fifths of the cases the liver or other organ is involved. There are about 100 cases recorded up to 1890. The mortality for 23 cases subjected to splenectomy is about 17 per cent.